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EVALUATIONS OF SOVIET SURFACE-TO-SURFACE MISSILE DEPLOYMENT

8TH REVISION

A Report of the Deployment Working Group
of the
Guided Missiles and Astronautics Intelligence Committee

A0003230

1 August 1963

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PREFACE

This report, formerly published bimonthly by the GMAIC Deployment Working Group (DWG) in mimeograph form, has been expanded to include additional data. It will continue to be published bimonthly in this new format.

Dissemination of the report was previously limited to holders of the DWG report, Soviet Surface-to-Surface Missile Deployment. Because the information contained herein is both supplemental and self-sustaining, distribution will no longer be limited to holders of the above report.

The current format provides a comprehensive, ready reference listing of all ICBM, IRBM, and MRBM deployment locations, types of site configurations, photographic references, estimated construction and operational status, and other evaluations of the DWG. Additional data may be added to future revisions.

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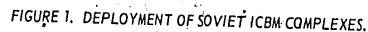
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INTRODUCTION

This report is the eighth revision of Evaluations of Soviet Surface-to-Surface Missile Deployment prepared by the Deployment Working Group of The Guided Missiles and Astronautics Intelligence Committee. The seventh revision, dated 1 June 1963 and disseminated under control number TH1830-63KH (A0003247), should be destroyed in accordance with existing instructions for handling TALENT-KEYHOLE material.

_____ have provided considerable new information on which to base a judgment of the construction timing and pace of the Soviet ballistic missile deployment program. The new data are reflected in the estimates and operational status shown in Tables 2 and 3.

SOVIET ICBM DEPLOYMENT

No new ICBM complexes have been identified since _____ however, at the 13 confirmed ICBM complexes 13 new ICBM sites have been identified on Mission _____. The new soft site at Gladkaya has been placed adjacent to Launch Area A, and it appears that Launch Area A may have been abandoned. It is believed that this new site will replace Launch Site A. The newly identified ICBM sites raise the total number of deployed sites to 92 (202 launchers) in the probable and confirmed category (assuming 3 launch sites at each hard site) and 3 sites in the possible category (6 to 9 launchers). Of the 202 probable and confirmed launchers, about 100 are considered to be operational. The three possible sites are in a very early stage of construction, and it is not yet possible to determine their configuration. See Figure 1 for locations of deployed ICBM complexes.

We have regrouped the various types of ICBM sites for the purpose of standardization with Defense Intelligence Agency publications. It is requested therefore, that in the future, intelligence agencies use the following new designations (Figure 2) when referring to Soviet ICBM site configurations:

Type I - Any soft site with a rail-served pad or pads. To date, this type site has been observed only at Plesetsk and at Launch Complexes A and B at Tyura Tam.

Type II - Any soft site with road-served pads. Since June of 1961, we have identified four deployed variations of this basic concept. These have been designated as Type II A, B, C, and D. Type II sites at Tyura Tam are located at Launch Areas C and E.

Type III - Any hardened, road-served launch site. Type III sites have been identified at deployed locations and at Launch Areas D and F at Tyura Tam; although there has been some question as to the number of launch silos at Type III sites, it is the considered judgment that it is more likely that the hard ICBM sites identified to date have three launch silos. Neither the degree of hardening nor the depth of the silos can be determined from available photography.

Launch complexes at Areas D and F at Tyura Tam strongly suggest that there are two prototype hard ICBM site configurations. Hard sites have been positively identified at 13 deployed ICBM complexes. It appears that the hard sites under construction at Omsk and Kozelsk have a slightly different configuration, and will resemble Launch Area F at Tyura Tam when completed. However, until a more positive association can be made, all hard ICBM launch sites will be carried in the general Type III category.

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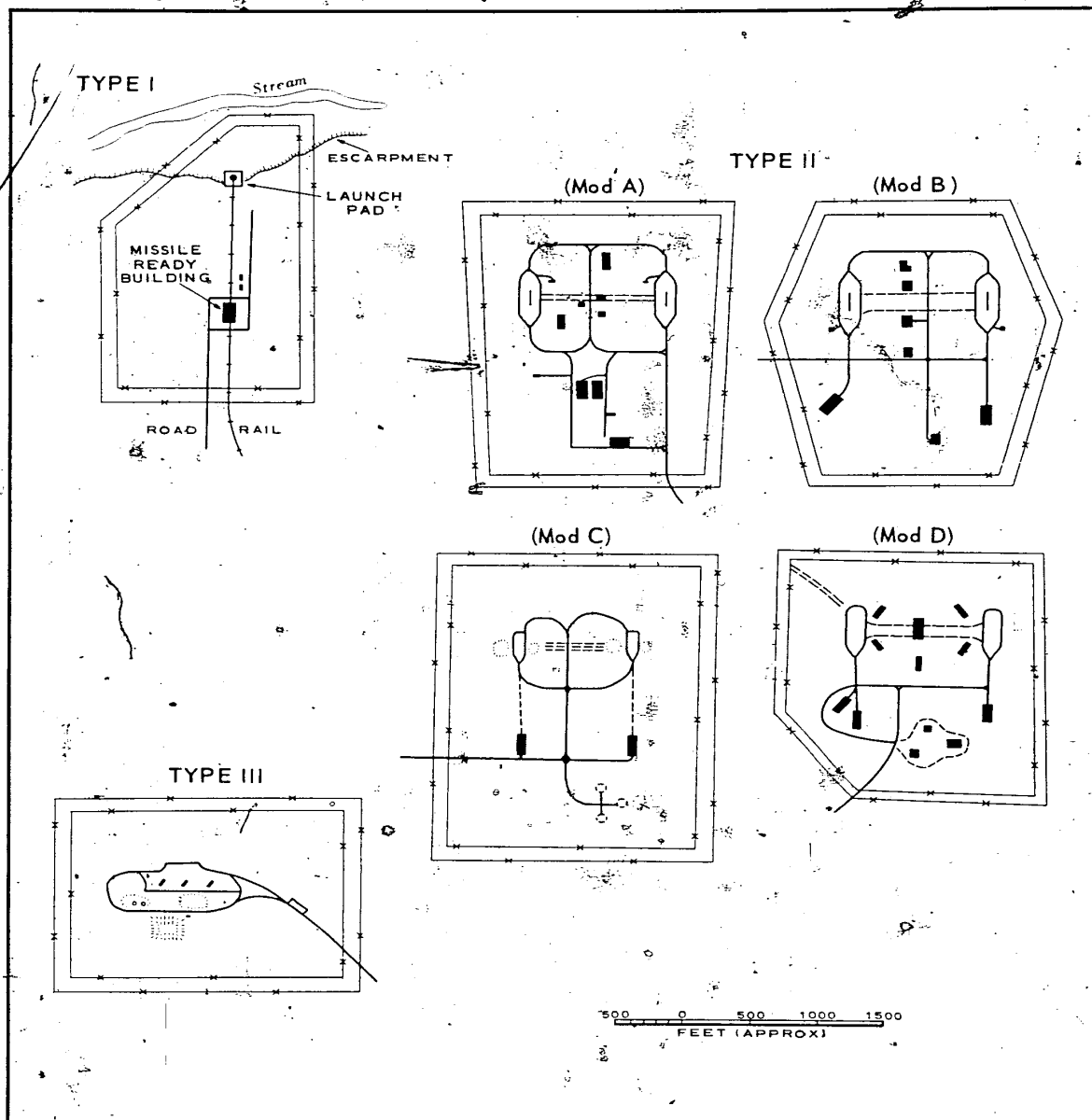


FIGURE 2. TYPICAL CONFIGURATIONS OF ICBM LAUNCH SITES.

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Recent missions show that the time required to complete some of the hard Type III sites is somewhat longer than previously estimated. We have therefore extended the estimate of the time required for the Soviets to complete deployed hard sites to about 24 months.

Nineteen new ICBM launch sites were identified on Missions [] at the following complexes:

KOSTROMA	TEYKOVO	DROVYANNAYA
Launch Site G Type II D	Launch Site E Type II D	Launch Site E Type III
KOZELSK	SHRADRINSK	GLADKAYA
Launch Site E Type III	Launch Site C Type III	New Launch Site at A Type II D Launch Site C Type II D
OLOVYANNAYA	ITATKA	
Launch Site B Type III	Launch Site C Type II D	
PERM		
Launch Site D Type II D Launch Site E Type II D Launch Site F Type III		
SVOBODNY		
Launch Site E Type II D		
YOSHKAR-OLA		
Launch Site E Type II D Launch Site F Type II D		
YURYA		
Launch Site I Type II D Launch Site J Type II D Launch Site K Type III		
YEDROVO		
Launch Site C Type II D		

All of the new soft sites identified on Missions [] either have or are expected to have two canted buildings aboard of each launch pad. These sites have been designated as Type II D sites, and are almost identical to the new prototype site comprised of launch pads C-2 and C-3 at Tyura Tam. Deployment has been concurrent with the modification of Launch Complex C at the rangehead. Only one of the deployed II D sites (Yoshkar-Ola Launch Area D) is far enough along in construction to be considered as operational. Several others appear to be in a late stage of construction and will probably become operational during the fourth quarter of 1963. It is possible that the Type II D sites will have a somewhat shorter construction time than the 15 months observed for Type II B sites.

Construction of some of the Tyumen (Type II C) sites, first observed on Mission [] April 1962, is still continuing. No new sites of this type have been identified since mid-1962.

[] shows that Launch Site B at Gladkaya is being converted to a Type II D site. Also it appears that Launch Site A has been abandoned, and a new Type II D site has been identified about three-fourths of a mile away. Photography of the Tyumen ICBM complex shows that construction activity is continuing at Launch Sites A and C, and that these two sites are nearing completion. On the other hand, construction at Launch Site B appears to be no further along than when observed in July 1962.

It is apparent that site activation has taken much longer at the remaining Type II C sites, and it is probable that the activity was either stopped and/or slowed because of difficulties encountered in the associated weapon system development program.

Several features of the II C sites, i.e., interferometer, plus-configuration, and general size, together with similarities at Pad E-3 at

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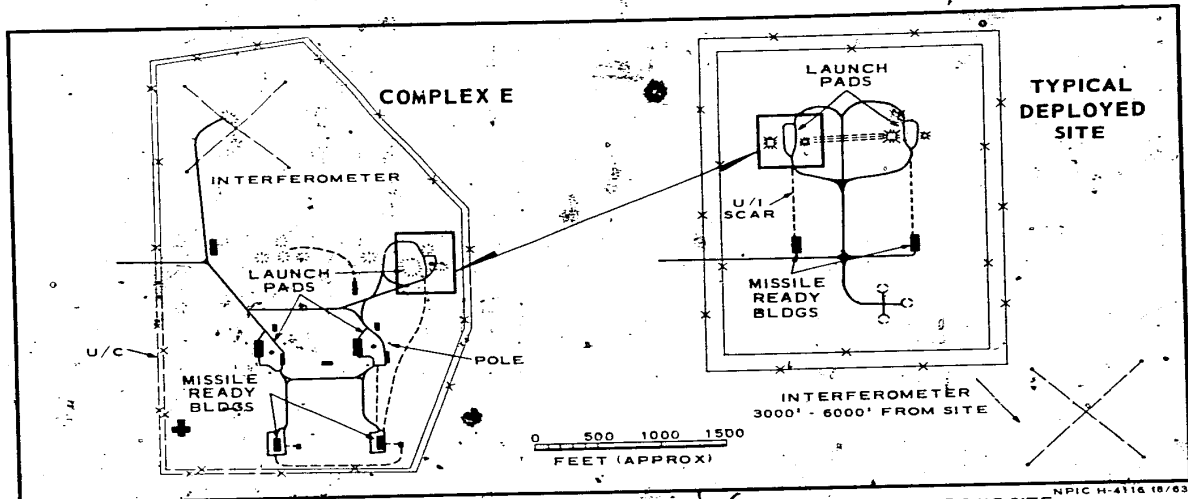


FIGURE 3. COMPARISON OF COMPLEX E, TYURA TAM, WITH TYPICAL DEPLOYED TYPE IIC SITE.

Tyura Tam, indicate that Complex E is the prototype for the Type IIC sites (Figure 3).*

SOVIET MRBM/IRBM DEPLOYMENT

A total of 131 soft MRBM sites (524 launch pads) and 13 soft IRBM sites (52 launch pads) have been identified to date. These totals include two new confirmed MRBM sites at Sunzhenskoye and Nesterobovskaya and one confirmed IRBM site at Zhuravka. The possible MRBM at Lakhdempokhya has been negated by [redacted]. Thirty-nine hardened MRBM/IRBM sites (78 launchers) have been identified to date, including newly identified sites at Kalnik, Achkhoy-Martin, Sary Ozek, Morkalni and Postavy. The probable hard site at Sary Ozek and the possible hard site at the Uman complex have been confirmed by Mission [redacted].

and a possible hard site at Novosysoyevka was identified. Previous reports have carried the MRBM/IRBM hard launch sites as having three silos, one of which was judged to be a portal silo. Since a reexamination of the hard ICBM sites has resulted in the judgment that it is more likely that three silos are for launchers, we are reexamining hardened MRBM/IRBM sites to determine the possibility of a third launch silo. Locations of deployed MRBM/IRBM complexes are depicted in Figure 4. The four basic MRBM/IRBM site configurations are presented in Figure 5. Three soft MRBM sites (Kraskino, Rozhdestvenka and Ugolnyy) have characteristics of both the soft elongated-pad MRBM and IRBM sites. These sites have been designated as MRBM sites since most of the characteristics favor the MRBM.

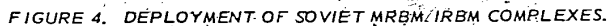
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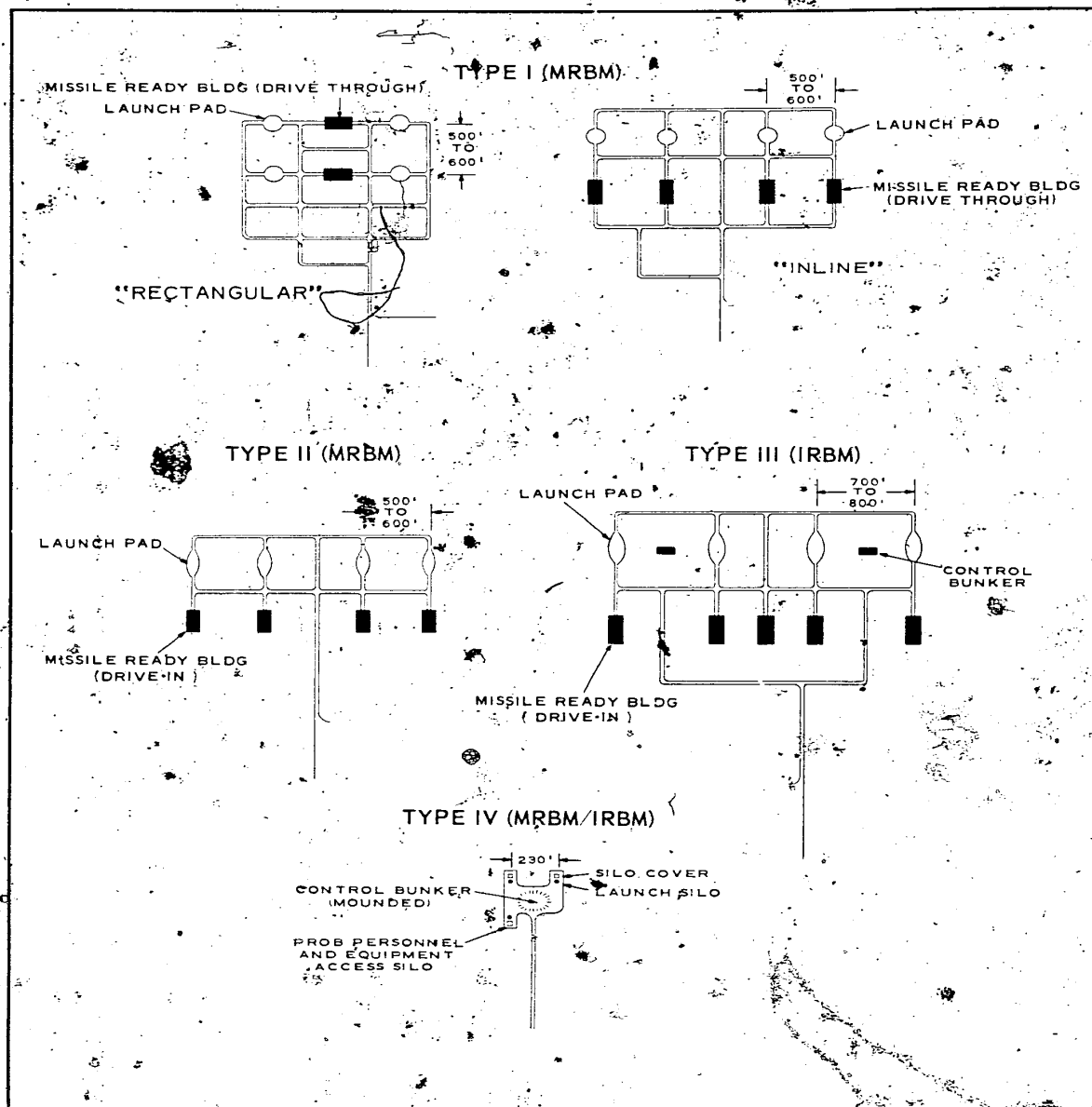


FIGURE 5. TYPICAL CONFIGURATIONS OF MRBM/IRBM LAUNCH SITES

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*The areas of Bratsk and Saransk are most suspect for ICBM deployment.

Table 4, an alphabetical listing of locations considered in detail by the Deployment Working Group in previous reports, has been deleted from this report, but will be maintained by the Working Group and published as required.

TABLE 1. SUMMARY OF ESTIMATED STATUS OF IDENTIFIED ICBM AND MRBM/IRBM LAUNCHERS AT DEPLOYED COMPLEXES*

Type	Sites	Launchers	Operational	U.C.	Type	Sites	Launchers	Operational	U.C.
ICBM					MRBM/IRBM				
I	3	4	4	0	I	50	320	320	0
II A	5	10	10	0	II	51	204	196	8
II B	31	62	60	2	III	13	52	52	0
II C	9	18	4	14	IV	39	78	60	18
II D	24	48	2	46					
III	20	60	15	42					
TOTAL	92	202	95	104	TOTAL	183	654	625	26

*See Tables 2 and 3 for details. Figures include a third launch silo at Type III ICBM sites.

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TABLE 2. SUMMARY EVALUATION OF SOVIET ICBM DEPLOYMENT

Location	BE Number	Coordinates	Type of Site	Number of Launchers		Site Noted		First Coverage		Last Coverage		Stage of Construction		Estimated Quarter Site Operational				Estimated Status
				Soft	Hard	Date	Msn	Date	Msn	Date	Msn	Date	Msn	1st	2nd	3rd	4th	
DROVYANAYA																		
Site A (1)		51-24N 113-00E	II B	2								Complete		63				Operational
Site B (2)		51-23N 113-07E	III		3							Mid		64				U/C
Site C (3)		51-20N 113-01E	II D	2								Mid				63		U/C
Site D (4)		51-25N 113-01E	II D	2								Early		64				U/C
Site E (5)		51-22N 112-50E	III		3							Early			65			U/C
GLADKAYA																		
Site A (1) Old		56-20N 92-10E	II C	2								Unk						Inactive
Site A (3) New		56-20N 92-20E	II D	2								Mid				63		U/C
Site B (2)		56-25N 92-25E	II D	2								Mid				63		U/C
Site C (4)		56-30N 91-58E	III		3							Early			65			U/C
ITATKA																		
Site A (1)		56-58N 85-33E	II B	2								Complete				62		Operational
Site B (2)		57-01N 85-39E	II B	2								Complete		63				Operational
Site C (3)		56-51N 85-39E	II D	2								Mid		64				U/C
KOSTROMA																		
Site A (1)		58-02N 41-21E	II B	2								Complete			62			Operational
Site B (2)		58-02N 41-07E	II B	2								Complete			62			Operational
Site C (3)		57-59N 41-09E	II B	2								Late				62		Operational
Site D (4)		58-05N 41-40E	II B	2								Mid		63				Operational
Site E (5)		57-57N 41-13E	III		3							Mid				63		U/C
Site F (6)		57-55N 41-09E	II D	2								Early				63		U/C
Site G (7)		58-06N 41-34E	II D	2								Early				64		U/C
KOZELSK																		
Site A (3)		53-54N 35-44E	II C	2								Mid				63		U/C
Site B (2)		53-48N 35-47E	II C	2								Mid				63		U/C
Site C (1)		53-46N 35-41E	II C	2								Mid				63		U/C
Site D (4)		53-52N 35-51E	II C	2								Mid				63		U/C
Site E (5)		53-54N 35-41E	III		3							Mid			64			U/C
NOVOSIBIRSK																		
Site A (2)		55-18N 83-10E	II B	2								Late		63				Operational
Site B (1)		55-18N 83-01E	III		3							Late			63			Operational
Site C (3)		55-23N 82-50E	III		3							Early		64				U/C
Site D (4)		55-21N 83-14E	II B	2								Early				63		U/C
OLOYANNAYA																		
Site A (1)		50-54N 115-49E	III		3							Mid			64			U/C
Site B (2)		50-55N 115-44E	III		3							Early				64		U/C
OMSK																		
Site A (1)		55-09N 73-35E	III		3							Mid		64				U/C
Site B (3) Possible		55-11N 73-33E	Undet									Early				64		U/C
PERM																		
Site A (1)		57-41N 56-13E	II B	2								Complete				62		Operational
Site B (3)		57-42N 55-57E	II B	2								Complete				62		Operational
Site C (3)		57-37N 56-07E	II B	2								Late				63		Operational
Site D (5)		57-43N 55-00E	II D	2								Mid				63		U/C
Site E (6)		57-45N 56-00E	II D	2								Early				64		U/C
Site F (4)		57-41N 56-04E	III		3							Early				64		U/C
PLESETSK																		
Site 1 (1)		62-55N 40-27E	I	2								Complete		60				Operational

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TABLE 2. (Continued)

Location	BE Number	Coordinate	Type of Site	Number of Launchers		Site Negotiated		First Coverage		Last Coverage		Stage of Construction			Estimated Quarter Site Operational				Estimated Status
				Soft	Hard	Date	Msn	Date	Msn	Date	Msn	Date	Msn	Const	1st	2nd	3rd	4th	
PLESETSK		62-56N 40-33E	I	1										Complete	60				Operational
Site 2 (2)		62-57N 40-41E	I	1										Complete	60				Operational
Site 3 (3)		62-58N 40-47E	II A	2										Complete	61				Operational
Site A (7)		63-03N 40-58E	II B	2										Complete	62				Operational
Site B (5)		63-01N 40-52E	III	2	3									Complete	63				Operational
Site C (6)		62-53N 40-50E	II C	2										Complete	63				Operational
Site D (8)		62-50N 40-35E	II C	2										Complete	63				Operational
Site E (7)																			
SHADRINSK		56-09N 63-32E	III	3										Late					Operational
Site A (1)		56-10N 64-03E	III	3										Mid	64				U/C
Site B (2)		56-07N 65-57E	III	3										Early					U/C
Site C (3)																			
SVORODNYI		51-55N 128-10E	II B	2										Complete					Operational
Site A (3)		51-49N 128-19E	II B	2										Complete	63				Operational
Site B (1)		51-53N 128-23E	II B	2										Complete	63				Operational
Site C (2)		52-00N 128-06E	II D	2										Mid					U/C
Site D (4)		51-43N 128-00E	II D	2										Early	64				U/C
Site E (6)		51-52N 128-13E	Undet											Undet					U/C
Site F (5) Possible																			
TEYKOVO		56-55N 40-27E	II B	2										Complete	62				Operational
Site A (1)		56-56N 40-33E	II B	2										Complete	62				Operational
Site B (2)		56-56N 40-37E	II B	2										Complete	63				Operational
Site C (3)		56-56N 40-40E	II B	2										Early					Operational
Site D (4)		56-48N 40-16E	II D	2										Mid	64				U/C
Site E (5)																			
TYUMEN		56-52N 65-36E	II C	2										Mid					Late
Site A (3)		56-48N 65-38E	II C	2										Unk					Inactive
Site B (1)		56-51N 65-28E	II C	2										Mid					Late
Site C (2)																			
VARKHNYAYA SA		58-09N 60-16E	II B	2										Complete	62				Operational
Site A (2)		58-06N 60-22E	II A	2										Complete					Operational
Site B (1)		58-10N 60-28E	II A	2										Complete	61				Operational
Site C (3)		58-12N 60-31E	II B	2										Complete	62				Operational
Site D (4)		58-14N 60-54E	II B	2										Complete	63				Operational
Site E (5)		58-14N 60-41E	III	2	3									Complete	63				Operational
Site F (7)		58-13N 60-49E	III	2	3									Mid					U/C
Site G (8)		58-05N 60-13E	II D	2										Mid	64				U/C
Site H (9)		58-07N 60-33E	II D	2										Mid	61				U/C
Site I (10)																			
VEDROVO		57-48N 33-36E	II B	2										Complete					Operational
Site A (2)		57-48N 33-14E	II B	2										Complete	62				Operational
Site B (1)		57-48N 33-08E	II D	2										Mid					U/C
Site C (5)		57-48N 33-29E	II D	2										Late					U/C
Site D (4)		57-52N 33-17E	III	2	3									Complete	63				Operational
Site E (8)		57-43N 33-06E	II D	2										Mid					U/C
Site F (6)		57-47N 38-02E	II D	2										Early	64				U/C

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TABLE 2. (Continued)

Location	BE Number	Coordinate	Type of Site	Number of Launchers		Site Negated		First Coverage		Last Coverage		Stage of Const. on Last Usable Coverage		Estimated Quarter Site Operational				Estimated Status
				Soft	Hard	Date	M-n	Date	M-n	Date	M-n	Date	M-n	1st	2nd	3rd	4th	
YOSHKAR-OLA																		
Site A (1)		56-35N 48-10E	II B	2								Complete		62				Operational
Site B (2)		56-35N 48-18E	II B	2								Complete			62			Operational
Site C (3)		56-32N 48-25E	II B	2								Complete	62					Operational
Site D (4)		56-32N 48-19E	II D	2								Complete			63			U/C
Site E (5)		56-34N 48-14E	II D	2								Late	64					U/C
Site F (6)		56-37N 48-22E	II D	2								Mid		64				U/C
YURYA																		
Site A (2)		59-09N 49-33E	II A	2								Complete					61	Operational
Site B (1)		59-08N 49-41E	II A	2								Complete					61	Operational
Site C (3)		59-12N 49-25E	II B	2								Complete	62					Operational
Site D (4)		59-15N 49-24E	II B	2								Complete		62				Operational
Site E (5)		59-22N 49-17E	UI	2								Complete				62		Operational
Site F (7)		59-21N 49-13E	II B	2								Complete	62					Operational
Site G (6)		59-04N 49-52E	III	2								Late				63		U/C
Site H (8)		59-11N 49-46E	II D	2								Late				63		U/C
Site I (11)		59-06N 49-45E	II D	2								Mid	64					U/C
Site J (9)		59-20N 49-26E	II D	2								Early			64			U/C
Site K (10)		59-13N 49-19E	II D	2								Early						U/C
Possible																		
SUB TOTALS						92	142	60										
TYURA TAM																		
Complex A		45-55N 63-20E	I	1								Complete						Operational
Complex A2		45-55N 63-20E	I	1								Complete						Operational
Complex B		45-50N 63-33E	I	1								Complete						Operational
Complex C1		45-48N 63-39E	II	1								Complete						Operational
Complex C2		45-48N 63-39E	II	1								Complete						Operational
Complex C3		45-48N 63-39E	II	1								Complete						Operational
Complex D1		45-50N 63-57E	III	3								Complete						Operational
Complex D2		45-50N 63-57E	III	3								Mid						U/C
Complex E		45-58N 63-12E	Prob II C	3								Complete						Operational
Complex F		46-02N 63-06E	III	3								Late						Operational
Complex G1		46-03N 62-56E	Undet	Undet	Undet							Mid						U/C
Complex G2		46-03N 62-56E	Undet	Undet	Undet							Early						U/C
Complex H			Undet															
TOTALS						101	151	69										

*DI site designators are indicated in parentheses.

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TABLE 3. SUMMARY EVALUATION OF SOVIET MRBM/IRBM DEPLOYMENT

LOCATION	BE NUMBER	COORDINATES	TYPE	NO. OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR. STATUS
AKHTYRKA Launch Complex						
Launch Site No 1 (AKHTYRKA 1)		50-15-45N 34-50-15E	II	4		Complete
Launch Site No 2 (AKHTYRKA 2)		50-22-00N 34-57-15E	II	4		Complete
ALUKSNE Launch Complex						
Launch Site No 1 (LEJASCHEVS)		57-21-13N 26-44-45E	II	4		Complete
Launch Site No 2 (RUSKI)		57-25-13N 26-50-00E	II	4		Complete
Launch Site No 3 (MORKALNI)		57-18-00N 26-33-30E	IV	2		Complete
ANASTASYEVKA Launch Complex						
Launch Site No 1 (ANASTASYEVKA 1)		48-35-00N 135-38-45E	II	4		Complete
Launch Site No 2 (ANASTASYEVKA 2)		48-36-45N 135-41-30E	II	4		Complete
BALTA Launch Complex						
Launch Site No 1 (BALTA 1)		48-01-45N 29-33-30E	II	4		Complete
Launch Site No 2 (BALTA 2)		48-07-45N 29-34-30E	II	4		Complete
BARANO-ORENBURGSKOYE Complex						
Launch Site No 1 (SOFIYE ALEKSEYEVSKOYE)		44-15-30N 131-23-00E	I	4		Complete
Launch Site No 2 (BARANO-ORENBURGSKOYE)		44-19-45N 131-20-15E	I	4		Complete
BELOKROVICH Launch Complex						
Launch Site No 1 (OLEYSK 1)		51-08-45N 28-03-30E	I	4		Complete
Launch Site No 2 (OLEYSK 2)		51-10-30N 28-00-15E	I	4		Complete
Hard Launch Site (RUDNYA ZLOTINSKAYA)		51-04-30N 28-07-00E	IV	2		Complete
BELOMORSK						
Launch Site No 1 (ROMOYE)		64-26-15N 34-18-15E	III	2		Complete
BORSHCHEV Launch Complex						
Launch Site No 1 (SKALA PODOLSKAYA 1)		48-51-00N 26-45-30E	I	4		Complete
Launch Site No 2 (SKALA PODOLSKAYA 2)		48-53-15N 26-45-30E	I	4		Complete
BREST Launch Complex						
Launch Site No 1 (BREST 1)		51-19-00N 24-01-00E	II	4		Complete
Launch Site No 2 (BREST 2)		51-51-45N 24-01-15E	II	4		Complete
BRODY Launch Complex						
Launch Site No 1 (BRODY 2)		50-13-15N 25-05-00E	I	4		Complete
Launch Site No 2 (BERESTETCHKO)		50-20-15N 25-05-30E	I	4		Complete
Hard Launch Site (BRODY 1)		50-06-00N 25-12-00E	IV	2		Complete
BUYNANSK Launch Complex						
Hard Launch Site No 1 (KAKASHURA)		42-39-15N 47-27-00E	IV	2		Complete
Hard Launch Site No 2 (GELL)		42-45-45N 47-28-15E	IV	2		Complete
Hard Launch Site No 3 (PARAUL)		42-47-45N 47-23-00E	IV	2		Late
DERAZHNYA Launch Complex						
Launch Site No 1 (DERAZHNYA 1)		49-21-00N 27-26-30E	II	4		Complete
Launch Site No 2 (DERAZHNYA 2)		49-26-30N 27-29-00E	II	4		Complete
Hard Launch Site (KUMELNITSKY)		49-24-45N 27-08-15E	IV	2		Complete

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TABLE 3. (Continued)

LOCATION	BE NUMBER	COORDINATES	TYPE	NO. OF PADS LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR. STATUS
DISNA Launch Complex						
Launch Site No 1 (DISNA)		55-35-15N 28-15-15E	I	4		Complete
Launch Site No 2 (ZELKI)		55-36-00N 28-24-30E	I	4		Complete
Launch Site No 3 (BORROVICH)		55-42-00N 28-27-15E	II	4		Complete
DOLINA Launch Complex						
Launch Site No 1 (DOLINA 1)		49-01-00N 24-03-30E	I	4		Complete
Launch Site No 2 (DOLINA 2)		49-06-15N 24-08-30E	I	4		Complete
Hard Launch Site (BOLEKHOV)		49-06-15N 23-51-15E	IV	2		Complete
DROGOBYCH Launch Complex						
Launch Site No 1 (MEDENTSA)		49-22-00N 23-45-30E	I	4		Complete
Launch Site No 2 (DROGOBYCH)		49-24-15N 23-34-45E	I	4		Complete
Hard Launch Site (STRYY)		40-16-30N 23-43-00E	IV	2		Complete
DYATLOVO Launch Complex						
Launch Site No 1 (DYATLOVO)		53-35-00N 25-16-30E	I	4		Complete
Launch Site No 2 (BEREZOVKA)		53-35-30N 25-17-45E	I	4		Complete
Launch Site No 3 (ZBLIANY)		53-36-15N 25-26-30E	II	4		Complete
GOMEL Launch Complex						
Launch Site No 1 (BORKHOV 1)		52-18-45N 30-43-00E	II	4		Complete
Launch Site No 2 (BORKHOV 2)		52-24-45N 30-38-30E	II	4		Complete
GRANOV Launch Complex						
Launch Site No 1 (GRANOV 1)		48-56-15N 29-30-30E	III	4		Complete
Hard Launch Site (GRANOV 2)		48-49-30N 29-29-15E	IV	2		Mid
Hard Launch Site (KALNIK)		48-59-30N 29-22-15E	IV			Mid
GRESK Launch Complex						
Launch Site No 1 (GRESK 1)		53-14-50N 27-42-15E	I	4		Complete
Launch Site No 2 (GRESK 2)		53-17-00N 27-41-15E	I	4		Complete
Launch Site No 3 (URECHYE)		53-11-30N 27-58-30E	II	4		Complete
GRÖZNYI Launch Complex						
Launch Site No 1 (SUNZHENSKOYE)		43-08-00N 44-55-00E	I	4		Complete
Launch Site No 2 (NESTEROBOVSKAYA)		43-12-00N 44-57-00E	I	4		Complete
Launch Site No 3 (ACHKHUY-MARTIN)		43-10-00N 45-17-00E	IV	2		Complete
GUSEV Launch Complex						
Launch Site No 1 (GUSEV 1)		54-41-30N 22-05-15E	I	4		Complete
Launch Site No 2 (GUSEV 2)		54-44-15N 22-04-15E	I	4		Complete
GVARDEYSK Launch Complex						
Launch Site 1 (GVARDEYSK 2)		54-45-15N 21-09-15E	I	4		Complete
Launch Site No 2 (PROBABLE) (GVARDEYSKI)		54-40-30N 21-08-00E	I	4		Complete
JELGAVA Launch Complex						
Launch Site No 1 (IECAVA 1)		56-35-30N 24-03-45E	II	4		Complete
Launch Site No 2 (IECAVA 2)		56-39-45N 24-08-00E	II	4		Complete
Hard Launch Site (IECAVA 3)		56-33-15N 24-20-30E	IV	2		Complete
JONAVA Launch Complex						
Launch Site No 1 (KARMELAVA)		54-57-15N 24-09-00E	II	4		Complete
Launch Site No 2 (JONAVA)		55-01-00N 24-14-15E	II	4		Complete

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TABLE 3 (Continued)

LOCATION	BE NUMBER	COORDINATES	TYPE	NO. OF PADS LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR. STATUS
KAMENETS-PODOLSKIY Launch Complex						
Launch Site No 1 (KAMENETS-PODOLSKIY)		48-51-15N 26-42-30E	II	4		Complete
Launch Site No 2 (DUNAYEVTSY)		48-55-15N 26-59-15E	II	4		Complete
KIVERTSY Launch Complex						
Launch Site No 1 (KIVERTSY 1)		50-52-45N 25-30-45E	I	4		Complete
Launch Site No 2 (KIVERTSY 2)		50-57-00N 25-36-15E	I	4		Complete
Launch Site No 3 (TROSTYANETS)		50-58-30N 25-39-15E	II	4		Complete
KONKOVICHI Launch Complex						
Launch Site No 1 (PETRIKOV)		52-10-30N 28-24-30E	I	4		Complete
Launch Site No 2 (KONKOVICHI)		52-15-30N 28-37-45E	I	4		Complete
KOROSTEN Launch Complex						
Launch Site No 1 (KOROSTEN 1)		50-51-45N 28-18-45E	II	4		Complete
Launch Site No 2 (KOROSTEN 2)		50-52-30N 28-30-30E	II	4		Complete
KOZHANOVICHI Launch Complex						
Launch Site No 1 (KOZHANOVICHI 1)		52-10-30N 27-51-30E	I	4		Complete
Launch Site No 2 (KOZHANOVICHI 2)		52-11-45N 27-48-30E	I	4		Complete
KRASKINO Launch Complex						
Launch Site No 1 (KRASKINO)		42-44-00N 130-40-15E	II	4		Complete
KRASNOZAMENSK Launch Complex						
Launch Site No 1 (VIESVILLE)		55-01-40N 22-23-00E	I	4		Complete
Launch Site No 2 (RAGNIT)		55-01-30N 22-11-30E	I	4		Complete
KROLEVETS Launch Complex						
Launch Site No 1 (KROLEVETS 1)		51-30-45N 33-28-45E	III	1		Complete
Launch Site No 2 (KROLEVETS 2)		51-40-15N 33-29-30E	III	1		Complete
KURGANCHI Launch Complex						
Launch Site No 1 (KURGANCHI 1)		39-37-15N 65-54-00E	I	4		Complete
Launch Site No 2 (KURGANCHI 2)		39-37-30N 65-57-15E	I	4		Complete
Hard Launch Site (TYM)		39-35-15N 65-42-15E	IV	2		Complete
LEBEDIN Launch Complex						
Launch Site No 1 (LEBEDIN 1)		50-33-00N 34-26-00E	III	4		Complete
Launch Site No 2 (LEBEDIN 2)		50-35-15N 34-24-45E	III	4		Complete
Launch Site No 3 (POSSIBLE)		50-38-00N 34-27-30E	III	4		Indetermined
LIDA Launch Complex						
Launch Site No 1 (LIDA 1)		53-47-00N 25-21-30E	I	4		Complete
Launch Site No 2 (EHJA 2)		53-57-00N 25-28-00E	I	4		Complete
LUTSK Launch Complex						
Launch Site No 1 (LUTSK 1)		50-46-15N 25-04-15E	I	4		Complete
Launch Site No 2 (LUTSK 2)		50-50-15N 25-03-00E	I	4		Complete
Hard Launch Site (VLADIMIR-VOLYNSKIY)		50-48-30N 24-42-30E	IV	2		Complete
MARINA GORKA Launch Complex						
Launch Site No 1 (MARINA GORKA)		53-26-30N 27-15-15E	II	4		Complete

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TABLE 3. (Continued)

LOCATION	BE NUMBER	COORDINATES	TYPE	NO. OF PADS LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR. STATUS
MAYKOP Launch Complex						
Launch Site No 1 (KURDZHIPSKAYA)		41-31-45N 49-00-45E	II	4		Complete
Hard Launch Site (SHIRVANSKAYA)		42-25-30N 39-54-00E	IV	2		Complete
MOLOSKOVITSY Launch Complex						
Launch Site No 1 (MOLOSKOVITSY 1)		59-28-45N 29-06-00E	II	4		Complete
Launch Site No 2 (MOLOSKOVITSY 2)		59-29-30N 29-12-30E	II	4		Complete
Hard Launch Site (GURELEVO)		59-25-30N 29-02-30E	IV	2		Complete
MUKACHEVO Launch Complex						
Launch Site No 1 (MUKACHEVO 1)		48-19-00N 22-31-00E	I	1		Complete
Launch Site No 2 (MUKACHEVO 2)		48-19-30N 22-37-45E	I	1		Complete
NADYORNOY Launch Complex						
Launch Site No 1 (PARYSHCHE)		48-38-00N 24-42-00E	I	1		Complete
Launch Site No 2 (NOVA VES)		48-39-30N 24-18-15E	I	1		Complete
Hard Launch Site (OTYNYA)		48-47-42N 24-50-15E	IV	2		Complete
NIGRANDE Launch Complex						
Launch Site No 1 (NIGRANDE)		56-31-00N 22-02-15E	III	1		Complete
Hard Launch Site (SKRUND)		56-35-45N 21-49-15E	IV	2		Early
Hard Launch Site (VAINODE)		56-28-30N 21-50-15E	IV	2		Early
NOVOSYVOYEVKA Launch Complex						
Launch Site No 1 (NOVOSYVOYEVKA)		41-11-26N 43-26-00E	III	1		Complete
Hard Launch Site		41-07-45N 43-27-30E	IV	1		Complete
Hard Launch Site (POSSIBLE)		44-07-45N 43-35-45E	IV	1		Early
OSTROG Launch Complex						
Launch Site No 1 (OSTROG 1)		50-14-30N 26-44-00E	I	1		Complete
Launch Site No 2 (OSTROG 2)		50-17-15N 26-41-30E	I	1		Complete
OSTROV Launch Complex						
Launch Site No 1 (PASYOVSHCHINA)		57-32-45N 28-12-00E	I	1		Complete
Launch Site No 2 (SHEVELEVO)		57-37-30N 28-12-45E	I	1		Complete
Hard Launch Site (REDKINO)		57-24-30N 28-26-45E	IV	2		Mid
PAPLAKA Launch Complex						
Launch Site No 1 (PAPLAKA 1)		56-21-00N 21-15-30E	I	1		Complete
Launch Site No 2 (PAPLAKA 2)		56-25-30N 21-15-30E	I	1		Complete
PERVOMAYSK Launch Complex						
Hard Launch Site No 1 (KAMENNY MOST)		47-58-30N 30-53-00E	IV	2		Complete
Hard Launch Site No 2 (SEMENOVKA 1)		47-58-45N 30-50-30E	IV	2		Complete
Hard Launch Site No 3 (SEMENOVKA 2)		47-53-45N 30-57-30E	IV	2		Mid
PINSK Launch Complex						
Launch Site No 1 (IVANOV)		52-10-45N 25-41-00E	I	1		Complete
Launch Site No 2 (MOTOL)		52-12-45N 25-41-45E	I	1		Complete
POLOTSK Launch Complex						
Launch Site No 1 (POLOTSK 1)		55-22-45N 28-44-00E	II	1		Complete
Launch Site No 2 (POLOTSK 2)		55-24-15N 28-33-30E	II	1		Complete
POSTAVY Launch Complex						
Launch Site No 1 (POSTAVY)		55-09-45N 26-54-15E	II	1		Complete
Launch Site No 2 (KOZYANY)		55-20-30N 26-51-30E	II	1		Complete
Hard Launch Site (POSTAVY 2)		55-06-15N 27-00-15E	IV	2		Mid

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TABLE 3. (Continued)

LOCATION	BE NUMBER	COORDINATES	TYPE	NO. OF PADS/ LAUNCHERS	DATE OF LATEST PHOTOGRAPH	ESTIMATED CONSTR. STATUS
PRUZHANY Launch Complex						
Launch Site No 1 (PRUZHANY 1)		52-30-30N 24-08-15E	II	4		Complete
Launch Site No 2 (PRUZHANY 2)		52-33-00N 24-07-00E	II	4		Complete
RAKVERE Launch Complex						
Launch Site No 1 (SIMUNA)		59-08-30N 26-26-30E	II	4		Complete
Launch Site No 2 (VAJGE MAARJAN)		59-11-30N 26-20-15E	II	4		Complete
RISTI Launch Complex						
Launch Site No 1 (RISTI 1)		59-04-00N 24-03-15E	I	4		Complete
Launch Site No 2 (RISTI 2)		59-06-30N 24-06-30E	I	4		Complete
ROZHDESTVENKA Launch Complex						
Launch Site No 1 (ROZHDESTVENKA)		46-47-15N 133-43-15E	II	4		Complete
RUZHANY Launch Complex						
Launch Site No 1 (KRUPA 1)		52-48-15N 24-42-00E	II	4		Complete
Launch Site No 2 (KRUPA 2)		52-49-30N 24-45-30E	II	4		Complete
SARY OZBEK Launch Complex						
Launch Site No 1 (KARA BABAU 1)		44-32-00N 77-46-15E	III	4		Complete
Hard Launch Site 2		44-31-00N 77-58-15E	IV	2		Complete
Hard Launch Site 3		44-31-00N 77-43-00E	IV	2		Mid
SATEIKAI Launch Complex						
Launch Site No 1 (SALANTAI 1)		55-59-15N 21-38-00E	I	4		Complete
Launch Site No 2 (SALANTAI 2)		56-02-15N 21-41-30E	I	4		Complete
Hard Launch Site (ZEMAITU KALVADJA)		56-01-30N 21-53-30E	IV	2		Complete
SLONIM Launch Complex						
Launch Site No 1 (BYTEN 1)		52-52-30N 25-21-00E	I	4		Complete
Launch Site No 2 (BYTEN 2)		52-55-30N 25-21-30E	I	4		Complete
SMORGON Launch Complex						
Launch Site No 1 (SMORGON 1)		54-31-15N 26-17-30E	III	4		Complete
Launch Site No 2 (SMORGON 2)		54-36-15N 26-23-15E	III	4		Complete
Hard Launch Site (SMORGON 2)		54-26-15N 26-18-15E	IV	2		Complete
SOKAL Launch Complex						
Launch Site No 1 (SOKAL 1)		50-23-00N 24-48-30E	I	4		Complete
Launch Site No 2 (SOKAL 2)		50-27-30N 24-20-15E	I	4		Complete
Hard Launch Site (SOKAL 3)		50-20-15N 24-26-00E	IV	2		Complete
SOVETSK Launch Complex						
Launch Site No 1 (SLAVSK 1)		54-59-15N 21-37-15E	I	4		Complete
Launch Site No 2 (SLAVSK 2)		55-00-00N 21-20-00E	I	4		Complete
SUCHAN Launch Complex						
Launch Site No 1 (NOVITSKOYE)		43-01-15N 133-17-15E	I	4		Complete
Launch Site No 2 (SEVERNY SUCHAN)		43-10-60N 133-20-00E	I	4		Complete
TAURAGE Launch Complex						
Launch Site No 1 (TAURAGE 3)		55-05-15N 22-39-30E	I	4		Complete
Launch Site No 2 (TAURAGE 1)		55-10-15N 22-20-15E	I	4		Complete

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TABLE J. (Continued)

LOCATION	DE NUMBER	COORDINATES	TYPE	NO. OF PADS LAUNCHERS	DATE OF LATEST PHOTOGRAPHY	ESTIMATED CONSTR. STATUS
TAYBOLA Launch Complex						
Hard Launch Site No 1 (TAYBOLA 1)		68-28-15N 33-15-15E	IV	2		Complete
Hard Launch Site No 2 (TAYBOLA 2)		68-30-00N 33-23-00E	IV	2		Complete
Hard Launch Site No 3 (TAYBOLA 3)		68-25-45N 33-29-30E	IV	2		Late
TORVA Launch Complex						
Launch Site No 1 (TORVA 1)		57-56-30N 26-01-30E	I	4		Complete
Launch Site No 2 (TORVA 2)		57-59-15N 26-05-15E	I	4		Complete
Hard Launch Site (TSBGULINA)		57-49-45N 26-12-15E	IV	2		Complete
UGOLNYY Launch Complex						
Launch Site No 1 (UGOLNYY)		64-46-15N 177-58-00E	H	1		Complete
UKMERGE Launch Complex						
Launch Site No 1 (VEPRIAL)		55-08-00N 24-38-45E	I	4		Complete
Launch Site No 2 (UKMERGE)		55-11-15N 24-42-30E	I	4		Complete
UMAN Launch Complex						
Launch Site No 1 (KOLODETSKOYE)		48-53-45N 30-27-45E	I	4		Complete
Launch Site No 2 (MANKOVKA)		48-57-45N 30-24-00E	I	4		Complete
Hard Launch Site (KISHENTSY)		49-00-15N 30-13-45E	IV	2		Complete
USOVO Launch Complex						
Launch Site No 1 (OVRUCH 1)		51-17-45N 28-16-00E	I	4		Complete
Launch Site No 2 (OVRUCH 2)		51-18-45N 28-10-30E	I	4		Complete
Launch Site No 3 (LIPNIKI)		51-12-00N 28-26-30E	II	4		Complete
VORU Launch Complex						
Launch Site No 1 (VORU 1)		57-46-00N 26-47-15E	II	4		Complete
Launch Site No 2 (VORU 2)		57-49-15N 26-50-40E	II	4		Complete
VSELYUB Launch Complex						
Launch Site No 1 (VSELYUB 1)		53-46-15N 25-43-00E	I	4		Complete
Launch Site No 2 (VSELYUB 2)		53-48-00N 25-46-45E	I	4		Complete
YELSK Launch Complex						
Launch Site No 1 (YELSK 1)		51-42-00N 29-12-30E	I	4		Complete
Launch Site No 2 (YELSK 2)		51-47-00N 29-18-00E	I	4		Complete
ZAGARE Launch Complex						
Launch Site No 1 (ZAGARE 1)		56-23-15N 23-19-30E	I	4		Complete
Launch Site No 2 (ZAGARE 2)		56-29-00N 23-21-30E	I	4		Complete
Hard Launch Site (LIELELEJA)		56-24-00N 23-36-45E	IV	2		Complete
ZHITOMIR Launch Complex						
Launch Site No 1 (ZHITOMIR 1)		50-04-45N 28-16-15E	II	4		Late
Launch Site No 2 (ZHITOMIR 2)		50-10-15N 28-16-00E	II	4		Complete
Launch Site No 3 (BERDICHEV)		50-05-45N 28-22-45E	II	4		Late
ZHMERINKA Launch Complex						
Launch Site No 1 (GNIVAN)		49-09-15N 28-12-45E	II	4		Complete
Launch Site No 2 (ZHMERINKA)		49-10-30N 28-01-45E	II	4		Complete
Hard Launch Site (VINNITSA)		49-17-30N 28-20-15E	IV	2		Complete
ZHURAVKA Launch Complex						
Launch Site 1		54-36-30N 26-40-45E	III	4		Complete
ZNAMENSK Launch Complex						
Launch Site No 1 (ZNAMENSK 1)		54-33-00N 21-11-15E	I	4		Complete
Launch Site No 2 (ZNAMENSK 2)		54-35-30N 21-08-45E	I	4		Complete

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